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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,056	09/28/2001	Mithat C. Dogan	015685.P050	4939

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EXAMINER

CHANG, EDITH M

ART UNIT PAPER NUMBER

2637

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,056

Applicant(s)

DOGAN ET AL.

Examiner

Edith M. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 10-12, 46 and 49-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 53-56 is/are rejected.
- 7) ☒ Claim(s) 1-5, 10-12, 46, 49-52, 57-62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1-5, 10-12 and 49-62 are objected to because of the following informalities:

Claim 1, line 3: "at one or more" should be "at least one or more"; lines 4, 9, 15 & 18: "the original" should be "the selected original"; line 6: "format" is suggested changing to "format, M is a positive integer"; line 12: "of complex" should be "of equal complex"; line 13: " $\exp(j2\pi/M)$;" should be " $\exp^{j2\pi/M}$,"; line 17: "the one or more" should be "the at least one or more".

Claims 2 & 3, line 2: "the original" should be "the selected original".

Claim 4, line 1: "the one or more" should be "the at least one or more"; line 2: "the autocorrelation" should be "an autocorrelation".

Claim 5, line 1: "the one or more" should be "the at least one or more"; line 2: "the cross-correlation" should be "a cross-correlation".

Claim 10, "a $\pi/2 - 2$ PSK modulation format" should be "a $\pi/2 - 2$ PSK modulation when $M=2$ ".

Claim 11, line 2: "comprises the sequence (1,1,-1,-1) repeating" should be "repeats the sequence (1,1,-1,-1)".

Claim 12, line 2: "from a family of" is suggested changing to "from".

Claim 49, lines 3, 12 & 15: "at one or more" should be "at least one or more"; lines 4, 8, 13 & 15: "original training" should be "selected original training"; line 5: "as

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employed by” should be “employed by”; line 6: “format” should be “format, M is a positive integer”.

Claim 50, “a $\pi/2$ – 2PSK modulation format” should be “a $\pi/2$ – 2PSK modulation when $M=2$ ”.

Claim 51, line 2: “comprises the sequence (0,0, π ,- π) repeating” should be “repeats the sequence (0,0, π ,- π)”.

Claim 52, line 4: “at one or” should be “at least one or”; lines 4 & 7: “the original” should be “the selected original”; line 6: “as employed” should be “employed”, “format,” should be “format, M is a positive integer,”.

Claim 53, line 1: “An base” should be “A base”; line 5 & 7: “original training” should be “selected original training”; line 7: “format, M is a positive integer,”.

Claim 54, lines 1 & 2: “the original” should be “the selected original”.

Claims 55 & 56, line 1: “the one or” should be “the at least one or”.

Claim 57, line 3: “comprising” should be “to”; line 4: “selecting” should be “select”; lines 5, 15 & 18: “at one or” should be “at least one or”; lines 6, 10, 16 & 18: “original training” should be “selected original training”; line 8: “format” should be “format, M is a positive integer,”; line 9: “forming” should be “form”; line 13: “of complex” should be “equal complex”; line 14: “ $\exp(j2\pi/M)$ ” should be “ $\exp^{j2\pi/M}$ ”.

Claim 58, line 2: “original training” should be “selected original training”.

Claim 59, line 1: “selecting of” should be “select”; line 2: “original training” should be “selected original training”.

Claims 60 & 61, line 1: “the one or” should be “the at least one or”.

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Claim 62 is dependent on the objected claim 57.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 53-56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 53, line 13, "the apparatus" lacks antecedent basis.

Claims 54-56 are dependent on the rejected claim 53.

Allowable Subject Matter

3. Claims 1-5, 10-12, 46, 49-52 and 57-62 would be allowable if rewritten the objection(s), set forth in this Office action.
4. Claims 53-56 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action, and the objections set forth in this Office action.
5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a method as a whole, the combination of elements and features,

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which includes a corresponding modifying sequence comprising pairs of equal complex numbers, equal phase shift, equal rotations, or equal angles, such that each pair is the previous pair, multiplied by $\exp^{j2\pi/M}$, added in magnitude by $2\pi/M$ radians or rotated by $2\pi/M$ radians, that a modified sequence is formed by modifying an original training sequence based on the corresponding modifying sequence as recited in the claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

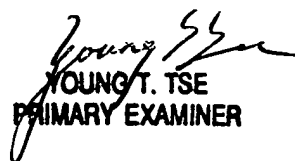
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
September 28, 2005


YOUNG T. TSE
PRIMARY EXAMINER